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A Summary of Current Program 7/1/64
and Preliminary Report of Progress
for 7/1/63 to 6/30/64

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CONSUMER AND FOOD ECONOMICS

RESEARCH DIVISION

of the

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

and related work of the

STATE AGRICULTURAL EXPERIMENT STATIONS

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CURRENT SERIAL RECORDS

This progress report is primarily a tool for use of scientists and administrators in program coordination, development and evaluation; and for use of advisory committees in program review and development of recommendations for future research programs.

The summaries of progress on USDA and cooperative research include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed, will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. Copies are distributed only to members of Department staff, advisory committee members and others having a special interest in the development of public agricultural research programs.

This report also includes a list of publications reporting results of USDA and cooperative research issued between July 1, 1963, and June 30, 1964. Current agricultural research findings are also published in the monthly USDA publication, Agricultural Research. This progress report was compiled in the Consumer and Food Economics Research Division, Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C.

UNITED STATES DEPARTMENT OF AGRICULTURE

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INTRODUCTION

Consumer and Food Economics Research is concerned with surveys of the kinds, amounts, and costs of food consumed by different population groups and the practices of families in the purchase and household use of various foods; the development of tables of the nutritive value of foods; nutritional appraisal of diets and food supplies; surveys of the kinds, amounts and costs of goods and services used for family living by rural households; special studies of clothing and household textile use by families; and studies of family practices in their management of financial and other resources. To facilitate improvement of the dietary situation, levels of living and home management practices, guidance materials are prepared such as food budgets, dietary guides, and other aids to help families make the most advantageous use of their money and time resources.

The program is organized in this report into three areas: (1) Food consumption and diet appraisal; 2) tables of food composition, and 3) family economics and rural living. The federal program is carried out at Hyattsville, Maryland and under contract and cooperative agreements with universities and private research organizations. The scientific effort devoted to this research in Fiscal Year 1964 totalled 35 professional man-years located at Hyattsville and the equivalent of 1 man-year in contract and cooperative agreements.

Research findings are disseminated to the scientific public chiefly through technical publications; to teachers, extension workers, and other leaders concerned with helping families and consumers, through semitechnical reports; and to consumers themselves, through popular publications. Two periodicals issued regularly by the Division help to disseminate research findings or current information of concern to the groups reached -- Nutrition Program News prepared for members of state nutrition committees and other workers in nutrition programs; and Family Economics Review, servicing extension agents, teachers, and other professional workers interested in family and food economics and home management.

The following are selected examples of recent progress in the Division's research program:

Improved data on composition of beef. The nutrient composition of beef has been intensively investigated in order to provide more complete and accurate data for tables of food composition. A method has been developed for establishing consistent relationships among carcasses of different grades and among cuts prepared from a carcass. This study provides for the first time average data (1) for carcass beef at the six USDA grades--Prime, Choice, Good, Standard, Commercial, and Utility; (2) for all the principal retail

cuts of the three major grades--Choice, Good, Standard; and (3) for cooked meat prepared from these cuts. The procedures developed for this study will be useful guides to research workers in investigations on other kinds of meat.

New facts about enrichment and fortification of foods. The enrichment of bread, flour, and cereals increases the thiamine in the food supply by about one-third, iron and niacin by about one-fifth, and riboflavin by one-tenth. Enough synthetic ascorbic acid is added to foods to increase the total in the food supply by 5 percent. CFE food economists made these estimates on the basis of a special survey made by the Bureau of the Census for USDA. Manufacturers and distributors provided information on the use of synthetic vitamins and iron for the 5-year period 1957-61. Approximately two-thirds of the B-vitamins and of the iron goes into flour, bread and certain other baking products. The other third is used in ready-to-eat and hot cereals, macaroni, rice, and cornmeal and hominy grits. The synthetic ascorbic acid added to foods, chiefly fruit juices and drinks, tripled between 1957 and 1961.

Value of low-income family consumption compared with expenditures. In a family living study in low-income areas of Texas, CFE family economists found that the average value of total consumption of the families was 30 percent higher than their average expenditures; in an earlier study in Kentucky, almost 50 percent higher. In addition to the year's expenditures for goods and services, the family's value of total consumption includes the money value of the products they raise or make for themselves, the use they get from housing, automobiles, furniture, equipment and clothing bought in earlier years, and the money value of goods and services received as gift or pay. In general annual expenditures tend to understate the level of living of low-income more than higher income families, of farm more than nonfarm families, of small more than large families, of older more than young families, and of white more than nonwhite families. These studies provide facts needed for programs to improve levels of living in under-developed areas.

AREA NO. 1. FOOD CONSUMPTION AND DIET APPRAISAL

Problem. Adequate information about food consumption and dietary levels is essential to effective consumer education especially in nutrition, to market analyses, and to agricultural policy and program evaluations--both to provide benchmarks and to measure progress. Needed are periodic surveys of the kinds, amounts, and costs of food consumed by different population groups, surveys of practices of families in the purchase and use of specific foods; studies of factors affecting food choices; and nutritional appraisals of diets and food supplies. To facilitate improvement of the dietary situation, suitable source materials such as food budgets and dietary guides based on advancing knowledge about food and nutrition should be developed for use in nutrition education programs.

USDA AND COOPERATIVE PROGRAM

The Department has a continuing, long term program involving nutritionists, food economists, and statisticians engaged in applied research in food consumption and diet appraisal. Most of the research is conducted in Hyattsville, Md., or occasionally under cooperative arrangement with State Experiment Stations, or under contract with universities or private firms. A contract with a private firm and a cooperative agreement with the Minnesota Agricultural Experiment Station were in effect during the period of this report. The Division's scientific effort devoted to research in this area in Fiscal Year 1964 totaled 19.8 professional man-years. Of this number 7.5 man-years were devoted to food consumption and dietary levels of households; 3.0 to food consumption and dietary levels of individuals; 2.8 to nutritive value of national food supply; 1.2 to food management practices; 1.8 to development of food budgets; and 3.5 to basic data for food and nutrition programs.

PROGRAM OF STATE EXPERIMENT STATIONS

The State program in food consumption and dietary appraisal extends the work of the Department to other segments of the population or to geographic areas not separately identified in the nationwide studies. Currently twelve states are contributing to this program. One regional project is designed to yield information regarding food purchase and consumption patterns of families with preschool children. This group represents about one-fourth of the households in the North Central Region where the study is being made. Food habits will be evaluated in terms of the children's dietary needs. This research will provide information useful to both consumer and market interests. In the Western Region ongoing research on consumer satisfaction with selected fruits and vegetables is nearing completion.

The State program in this area totals 22.2 professional man-years.

PROGRESS--USDA AND COOPERATIVE PROGRAMS

A. Food consumption and dietary levels--nationwide surveys of households.

1. Planning for proposed nationwide survey. The nationwide survey of household food consumption and of the food intake of individuals, funds for which were not provided in Fiscal Year 1964, is now scheduled for Fiscal Year 1965. Plans have been developed for a survey that would provide 6,000 household schedules in the spring of the year with smaller samples in each of the three succeeding seasons. The information on the week's food use to be obtained from each household is similar to that obtained in 1955. Information on home baking practices obtained in the 1955 survey would be dropped and information requested on home food production, home canning and home freezing would be reduced in order to allow interview time for questions on the food intake of household members. A new classification scheme for food items has been developed and new schedule forms designed for use in the 1965 survey.

2. Food economics research. Investigation of food expenditures with respect to income and associated conditions indicates that income as usually measured in surveys understates income elasticity. The transitory components of measured income which are especially large for consumer units with self employed heads (farm or nonfarm) have little effect on food consumption. The normal or permanent income of families, as measured by means of an instrumental variable for groups of families, tends to affect food expenditures of farm and nonfarm consumer units in much the same way.

Study of variation in average prices of foods among regions has indicated stability in the pattern of variation since similar variations were found in 1951 and 1955. Prices paid for food in 49 cities in 1951 varied little; prices were only 11 percent higher in the city with high food prices than in the one with low food prices.

B. Food consumption and dietary levels--area or special-purpose surveys of family or institutional households.

1. Food consumption and dietary levels of older households. Diets of households of beneficiaries of Old Age, Survivors and Disability Insurance in Rochester, New York were recalculated to reflect the 1963 recommended allowances of the National Research Council. Diets were much better in three nutrients than originally found. The percentages of households with food furnishing the allowances increased as follows: For iron, from 70 to 81 percent; for thiamine, from 63 to 83 percent; for riboflavin, from 71 to 89 percent; and for all 9 nutrients for which calculations were made, from 44 to 47 percent. A statement on these calculations was inserted in the manuscript "Food Consumption and Dietary Levels of Older Households in Rochester, New York," which is in press.

2. Effects of food distribution programs on diets of needy families. A survey of the food consumption of more than 500 households that were not participating in the food stamp program in St. Louis was made in May and June 1964 to determine the relation between usual family food expenditures and payments required for food coupons. Homemakers were also asked why their families did not participate in the program. Results of the analysis will guide the Department in revamping the St. Louis stamp program to make it more acceptable to eligible families and yet keep it within the limits of the program. Because of interest in the nutritional quality of food consumed by low-income families, an assessment may be made later of the dietary levels of these families. This is the sixth in a series of USDA food program surveys made in cooperation with the Marketing Research Division, ERS to assist the AMS administer the food stamp and direct distribution programs.

3. Food consumption of the rural population in Spain. (PL 480 Research). A survey of the food consumption of the rural population in Spain has been initiated by the Spanish Ministry of Commerce under the cooperative sponsorship of the Economic Research Service and the Agricultural Research Service, using PL 480 funds. The study will provide information needed in appraising potential markets in Spain for U. S. farm products and should yield information useful to U. S. authorities on efficient ways of improving nutrition in low-income areas. The Ministry of Commerce of Spain expects to obtain much useful information on which to base a program for improving the diets of rural families, especially through better distribution of food. Information on food consumption, income levels, and related socio-economic characteristics has been obtained from about 1,200 rural families in 6 major regions of Spain. In summarizing the results, emphasis is being placed on (1) determining the nutritional shortages among these rural families at different income levels in the different regions, and (2) computing income elasticities for different foods as well as total food consumption.

C. Food consumption and dietary levels of individuals.

1. Planning for proposed nationwide survey. In preparation for the proposed first nationwide survey of the food intake of individuals, data obtained by recall on the 1-day intake of food from nearly 550 individuals of all ages in Washington, D.C. during June and July 1963 have been studied in relation to two controversial issues that concern collection of data. The survey findings indicate that for this group: (1) the nonresponse rate on food intakes from individuals is not influenced by taking a schedule on household food consumption first (in comparison to taking none) nor by taking food intakes from half (in comparison to all) of the individuals in the family; and (2) homemakers report the amounts of food eaten by family members in terms of their individual servings far more often than as proportions of household amounts.

Tabulations of the Washington data also are useful as a pretest for tabulation of the nationwide survey. Problems under investigation concern: (1) Classification of individuals by age, (2) procedures for under sampling of adults, (3) time intervals to use to classify food intake by time of day, and (4) classification of foods.

2. Effect of economic, educational and social factors on food intake of individuals. Under a cooperative agreement with the Minnesota Agricultural Experiment Station three lines of work have been pursued: (1) The relationship between income, urbanization, and children in the family and the drinking of milk and the total intake of dairy products (excluding butter) has been studied intensively using the diets of 1,000 Iowa women that had been previously collected. Income was found to have some effect on intake of dairy products and thus on calcium intake. Children in the family appeared to reduce the drinking of milk and the total intake of dairy products by women in low-income households but to have little effect on the amount of these products taken by women in high income households. (2) Analysis of the relationship between intakes of vitamins A and C and their food sources and selected socio-economic factors for a group of 1,000, 9- to 11-year-old Ohio school children (previously collected data) indicates that: (a) intakes of vitamins A and C from food increased with family income; (b) at each income level, a larger proportion of urban than farm children had food that provided recommended amounts of vitamins A and C; and (c) children whose food was supplemented by vitamin A and C concentrates in general did not need them as they were in "nutrition conscious" families that provided the children with foods which were high in these vitamins. (3) In a pilot survey in late spring 1964, data were collected on the food intake during 7 days of 140 North St. Paul children in the fourth grade, their attitudes toward 50 vitamin A- and C-rich foods, and their nutrition knowledge. Also information was collected on food attitudes of their parents, nutrition knowledge of mothers and teachers and socio-economic characteristics of their families.

D. Nutritive value of national food supply.

The nutritive content of the per capita food supply is calculated each year from estimates of quantities of foods consumed (retail weight basis) as developed by the Economic Research Service. This series, which begins with the year 1909, is being completely revised to incorporate newest estimates of per capita consumption, revised food composition data from Agriculture Handbook No. 8, and new information on the nutrients added to foods by enrichment and fortification.

A survey conducted by the Bureau of the Census for the Consumer and Food Economics Research Division has provided information for the years 1957-61, on quantities of enrichment ingredients supplied to processors to fortify such cereal products as commercial or family flour, ready-to-eat and hot cereals, macaroni, rice, cornmeal and hominy grits. Results show that the amounts of enrichment ingredients used with flour are sufficient to enrich about 60 percent of the total whether used as family flour, commercial flour, or as commercially-baked white bread. This is about the same proportion as was used during 1950-53, the period covered by the last survey. There has been a marked increase, however, in the proportion of cereal products other than flour that have added ingredients. This survey indicates again the

importance of flour and cereal enrichment in supplying vitamins and iron for civilian consumption. Through this program about one-third more thiamine, one-fifth more iron and niacin and one-tenth more riboflavin are added to the Nation's diet than would be available if foods were not enriched.

For the first time, the enrichment survey was extended to include information on the quantities of ascorbic acid and vitamins A and D added to foods, thus furnishing a base line for future surveys. Currently the amount of ascorbic acid added to foods would be enough to increase the level in the per capita food supply by 5 percent. The contribution from synthetic vitamin A is 7 percent of which 6 percent is added through margarine. Vitamin D is not at present included in nutrient estimates.

E. Food management practices.

Household practices in homefreezer management. Recording forms and questionnaires for obtaining data on management practices of urban and rural home-freezer owners were pretested and necessary revisions were made in preparation for data collection among households in Fort Wayne and a nearby rural area. Information will be obtained in two seasons on the kinds, amounts, sources, prices, and turnover rates of frozen foods stored in the home. Such data will provide information needed to develop guidance materials for improved management of home freezers.

F. Development of food budgets--individual, household, institution.

Food budgets at different cost levels for individuals and families are priced quarterly for publication in Family Economics Review as a continuing service to welfare workers, extension agents, and others needing this information. For example, in June 1964, the cost of one week's food for a family of four including 2 school-aged children, was estimated to be \$24.40, \$32.80, and \$37.40, respectively, for the low-cost, moderate-cost, and liberal plans.

The food budgets published in HERR 20, "Family Food Plans and Food Costs," have been reexamined in the light of revisions in food composition data (Handbook 8, revised) and in recommended dietary allowances of the National Research Council. Some modification in food quantities was needed for certain individuals. This has meant revision of food plans and their presentation in technical and popular publications, including Agriculture Handbook 16, "Planning Food for Institutions," now being readied for publication.

The "Food Purchasing Guide for Group Feeding," formerly a part of Agriculture Handbook 16, is in the final stages of editing for publication as a separate handbook. It includes tables giving weights of purchase units, yields, size of portions, number of portions per purchase unit, and units required to serve 25 and 100 persons for foods commonly used in institutions.

G. Basic data for food and nutrition programs.

Interpretation of nutrition research findings and their application to practical problems has continued as part of an ongoing program to assist nutritionists, teachers, health workers, and other leaders concerned with applied nutrition programs or nutrition policies.

Nutrition Program News, a bimonthly periodical prepared for members of State nutrition committees and other community nutrition workers provides one channel for disseminating pertinent information about Federal programs and for reporting nutrition activities in the States. Issues this year included such diverse subjects as a report of the World Food Congress held in Washington, June 4-18, 1963, and "Labels on food products--the protection they give," which describes the program of the Food and Drug Administration as it contributes to the safety of our food, and to consumer protection against fraud. Other issues were directed to special nutrition problems, for example, "Nutritional fitness for teenagers," and to the coordination and strengthening of community nutrition programs. Assistance to workers in nutrition programs has been provided also through consultation and program participation by staff nutritionists.

Publications for use in nutrition programs must be kept up-to-date. Revisions this year in the recommended dietary allowances used as a goal in diet planning, and in food composition data (Handbook No. 8) made necessary a review of all existing guidance materials. Some have already been revised, others will be updated at the time of the next reprinting.

Information developed under this program is provided to many groups both within and outside the Department working on practical food programs, on questions relating to nutritional requirements, food consumption, nutritional importance of specified foods and on nutrition education. For example, staff members have: Prepared nutrition reference standards for evaluation of food supplies for use in the revised World Food Budget, a study of the Economic Research Service; co-authored a chapter on "Nutritional Status of the World" for the 1964 Yearbook of Agriculture; revised the section on food for survival in the National Plan for Civil Defense and Defense Mobilization, for the Office of Emergency Planning; prepared a chapter on nutrition at the request of the Peace Corps for inclusion in their manual "A Guide to Health;" assisted the School Lunch Staff, AMS, in evaluating the Type A pattern in the light of revised NRC dietary allowances; and prepared two articles on nutrition for classroom teachers for the "Grade Teacher." Increased emphasis has been given this year to opportunities for disseminating information to the public through TV and radio, press, conferences, workshops, and the Department's Food and Home Fair.

PUBLICATIONS--USDA AND COOPERATIVE PROGRAMS

Food Consumption and Dietary Levels of Individuals

Adelson, S. F., 1963. A 2-week vs. a 1-week Reference Period in Surveying Diets of Individuals. Abstract in Proceedings of Sixth International Congress on Nutrition, Edinburgh: p. 477.

Nutritive Value of National Food Supply

Consumer and Food Economics Research Division. 1963. "The Nutritional Review." National Food Situation, No. 106, Outlook issue, Nov.

Friend, Berta. 1963. Enrichment and Fortification of Foods, 1957-61. National Food Situation, No. 106, Nov.

Friend, Berta. 1964. Enrichment and Fortification of Foods. Family Economics Review, ARS 62-5, April.

Food Management Practices

Adelson, S. F., Delaney, I., Miller, C., and Noble, I. T. 1963. Discard of Edible Food in Households. Jour. Home Economics 55(8): 633-638.

Adelson, S. F. 1964. Family Food Discards. Family Economics Review, ARS 62-5, June.

Redstrom, R. A., Davenport, E. and Murray, J. 1963. Consumer Practices in the Handling and Storing of Commercially Frozen Foods, Two Cities, Two Seasons. Home Economics Research Report 23, 27 pp.

Development of Food Budgets--Individual, Household, Institution

Consumer and Food Economics Research Division. Cost of 1 Week's Food at Home. Family Economics Review. Sept., Dec. 1963; April, July 1964.

Consumer and Food Economics Research Division. 1964. Family Food Budgeting.. for good meals and good nutrition. Home & Garden Bul. 94.

Basic Data for Food and Nutrition Programs

Hill, M. M. 1963. Nutritional Fitness for Teenagers. Nutrition Committee News. July-August. 4 pp.

Hill, M. M. 1963. World Food Congress, June 4-18, Washington, D. C. Nutrition Program News. Sept.-Oct. 4 pp.

- Hill, M. M. 1963. Extension Service Programs Promote Good Nutrition.
Nutrition Program News. Nov.-Dec. 4 pp.
- Hill, M. M. 1964. Nutrition Committees and Their Role in Community Action
Programs. Nutrition Program News. Jan.-Feb. 4 pp.
- Hill, M. M. 1964. Labels on Food Products...the protection they give.
Nutrition Program News. Mar.-June. 4 pp.
- Phipard, E. F. Changes in USDA's Daily Food Guide. Note in Jour. Amer.
Dietetic Assoc. 44, June 1964, p. 502; 45, July 1964, p. 40.
- Morris, M. M. 1964. President's Commission on the Status of Women makes
recommendations. Family Economics Review. ARS 62-5, April.
- Hill, M. M. 1964. Nutritional Fitness for all Our Youth. "Texas Coach"
April.
- Wolgamot, Irene H. 1963. The World Food Congress. Jour. Home Economics.
55(8): 605-608.

AREA NO. 2: TABLES OF FOOD COMPOSITION

Problem. Reliable values on the composition of foods are needed for appraisal of diets and food supplies, as background for many types of research in foods and nutrition, for developing materials to help in dietary planning and food selection, for use in production planning for this and other countries, for developing programs of food distribution, and as the basis for food and dietary standards in regulatory programs.

USDA AND COOPERATIVE PROGRAM

Continuous review and evaluation is made of the world's scientific and technical literature on the composition of foods--over 100 journals in addition to numerous special reports being reviewed by the staff of nutrition analysts. For 70 years tables of data for certain nutrients in foods have been published by the U. S. Department of Agriculture. Each new publication reflects advances both in food analyses and in knowledge of nutritional needs--nutrients being added as information on their presence in foods and human requirements for them become available. Also reflected are advances in technology of preparing and marketing food and augmented facilities for fast transportation.

The Federal scientific effort devoted to work in this area conducted in Hyattsville in Fiscal Year 1964 totaled 8.7 professional man-years.

PROGRAM OF STATE EXPERIMENT STATIONS

The States report no research in this area.

PROGRESS--USDA AND COOPERATIVE PROGRAMS

Research for the newly revised Agriculture Handbook No. 8 "Composition of Foods...raw, processed, prepared" has been supplemented by further research during the year and adapted to the needs of special projects.

Citrus fruit and ascorbic acid. Supplementary information on citrus fruit and an explanation of the procedures for deriving ascorbic acid values for citrus fruit that were published in the Handbook have been presented in a journal article and several talks. The derivation of these values serves to illustrate the kind of information needed to develop data for the Handbook; further, it serves as a basis for determining appropriate applications and stating the limitations of the data. The search of the literature revealed a wide variation in the amount of ascorbic acid occurring in different samples

of any one kind of citrus fruit. Analysis of this array of values indicated that the principal determinants of the level of ascorbic acid in oranges were variety, site of production and period of picking within the harvest season. Statistics on production and marketing of commercial varieties were used to obtain a weighted value that could be used as nationwide, year-round average figure for ascorbic acid in oranges. In addition to this average, values were derived for different commercially important varieties of oranges, both Florida and California, and values for canned, frozen, and dehydrated orange juice products. The article also provides additional detail for other kinds of citrus fruits, including seasonal changes in ascorbic acid in pink and white grapefruit, in tangerines, and tangelos. Problems in deriving representative vitamin A values for citrus fruits and their products on the basis of data currently available are also discussed in the article.

Beef. Data from several large recent studies have made it possible to develop a procedure for obtaining representative figures for calories and for the proximate and physical composition of beef. By this method data may be obtained for (1) beef carcasses or sides of the different grades, (2) retail cuts made from the carcasses with an ordinary amount of trimming, (3) retail cuts completely trimmed of all separable fatty tissue, and (4) cooked meat prepared from the retail cuts. The method as developed provides data having appropriate relationships between the physical composition (percentages of lean, fatty tissue, and bone) and the proximate composition (percentage of water, protein, fat, ash). The data on beef published in Handbook 8 were obtained by this procedure. Included in a research report are data on the physical and chemical composition of more grades and cuts of beef than it was feasible to include in the Handbook and an explanation of the procedure used in developing the values. Information presented in the report illustrates the types of research needed for meats other than beef to provide data equally satisfactory for them.

Publication on formulas used in Handbook 8. Formulas and procedures that were used in calculating the nutritive values of 250 food items commonly prepared at home are being summarized for special users, particularly therapeutic dietitians and medical research workers. A table showing average adjustments for vitamin losses during cooking has been developed and will be included in the publication.

Punched cards and tape available. Selected data from Agriculture Handbook No. 8, Revised, have been made available in decks of punched cards and magnetic tape for research workers. Available in this form are the data from Table 1, the nutritive values for 100 grams edible portion of the foods; from Table 2, nutritive values for one pound of food as purchased; from Table 3, selected fatty acids in foods. Arrangements have been made for the sale of the cards and the tape by a private data processing firm in Washington.

Tables for Department of Defense. Tables have been prepared on the composition of 630 food items procured by the Defense Supply Agency for feeding military personnel. Values for the composition of foods developed for Handbook No. 8 and many additional values provided by the Department of Defense were used to develop the data needed for the numerous special food products meeting military specifications.

PUBLICATIONS--USDA AND COOPERATIVE RESEARCH

- Watt, Bernice K., and Merrill, Annabel L. April 1964. Composition of Foods...raw, processed, prepared. Agriculture Handbook No. 8. Revised December 1963. 190 pp.
- Watt, Bernice K. April 1964. Revising the Tables in "Agriculture Handbook No. 8." J. Am. Diet. Assn. 44(4): 261-263.
- Merrill, Annabel L. April 1964. Citrus Fruit Values in Handbook No. 8, Revised. J. Am. Diet. Assn. 44(4): 264-270.
- Watt, Bernice K. April 1964. Implications of Food Composition Tables. Nutrition News, published by the National Dairy Council. 27(2): 5, 7-8.
- Leung, Woot-Tsuen Wu, Pecot, Rebecca K., and Watt, Bernice K. May 1964. Tables of the Composition of Foods for the Armed Forces. Department of Defense. Defense Supply Agency. 50 pp.
- Consumer and Food Economics Research Division. Revised 1964. Nutritive Value of Foods. Home and Garden Bull. 72.
- Consumer and Food Economics Research Division. 1963. Conserving the Nutritive Values in Foods. Home and Garden Bull. 90. 16 pp.

AREA NO. 3. FAMILY ECONOMICS AND RURAL LIVING

Problem. Levels of living of rural families, often substantially lower than those of urban families, can be described in part by the quantities of goods and services families use for family living and the quality of housing they occupy. Periodic studies describing the situation from time to time and showing the adjustments families make to economic change in their use of money and other resources are needed to facilitate the development of programs to improve levels of living, especially in underdeveloped areas. Family living surveys and other types of family economic research provide background information for consumer education and family living outlook reports. Data on quantities of clothing and household textiles used and the frequency with which they are replaced are needed in development of budgets and in delineating those groups of items for which demand for agricultural fibers might be expanded.

USDA PROGRAM

The Department has a continuing, long-term program involving family economists, home economists, and statisticians in basic studies of family living expenditures of rural families and of their home-management practices, and in the development of source material for consumer education and of information on the current family living situation and outlook. Most of the research is carried out by Department staff in Hyattsville, Md. Small scale studies are usually conducted under cooperative arrangements or on contract. Other research, such as the nationwide Survey of Consumer Expenditures, is conducted cooperatively with other Federal agencies, in this case the Bureau of Labor Statistics, and, within the USDA, with the Statistical Reporting Service and Economic Research Service.

The Division's scientific effort devoted to research in this area in Fiscal Year 1964 totaled 6.8 professional man-years. Of this number 3.5 were devoted to rural family living studies; 0.5 to family financial management; 0.8 to clothing economics; and 2.0 to the development of rural family living and outlook reports.

PROGRAM OF STATE EXPERIMENT STATIONS

The States' research reported in this area is concerned with both economic and non-economic factors contributing to the quality of living. The research is specific to family goals and levels of living, with consideration for local situations and needs. It may be concerned with special segments of the population, such as the aging or young married couples, or may focus on the special family-related problems arising from rural adjustment needs. About nineteen states are contributing to the economic phases of this research program and twenty-four to the non-economic phases.

Included are longitudinal studies of family expenditures, factors affecting decisions made relative thereto, and effects of decisions on family's financial position. Expenditure patterns at different income and age levels are being analyzed, as well as specific management practices related to level of living. Underlying all research in this area is a need for increased understanding of the factors contributing to the well-being of people. Some research evaluating the effects of mass media in family or consumer education programs is also included.

Other research is concerned with the role of the home and family in developing human resources, with special concern for the problems which rural adjustment brings to bear on the home. Educational and vocational goals of rural youth is the subject of study of four Southern States. Some work is concerned with family's interest in community services and programs and with their needs in relation to such programs. There is also limited basic work on family decision making. Research reported here tends to focus on family living patterns, goals, adjustments, and the well-being of our human resources.

The States research reported in this area is 15.6 professional man-years in the economic phases and 32.1 professional man-years in other phases representing a total of 47.7 professional man-years.

PROGRESS--USDA AND COOPERATIVE PROGRAMS

A. Rural family living

1. Nationwide studies. Plans for the publication of the farm data from the 1961 Survey of Consumer Expenditures have been completed. The publications will parallel the BLS publications for the urban, rural nonfarm, all nonfarm and all U. S., and will be issued in a special Department series. Tables for the four Census regions showing summary data for income, expenditures and change in assets and liabilities of farm families classified by ten family characteristics have been produced. Later tabulations will show (1) greater detail in income, family expenditures and change in assets and liabilities classified by income and family size, and (2) summary tabulations of income, expenditures and change in assets and liabilities classified by combinations of family characteristics. Many passes of the data through the data processing machines are required to produce these tabulations and most runs have required considerable technical review and follow-up of inconsistencies in the data by CFE staff.

Preliminary data from the farm segment of the survey were compared with urban data collected by BLS in a paper presented at the annual meeting of the American Home Economics Association in June, 1964. The paper also outlined the scope of the information that will be available from the survey.

Farm families spent an average of \$3,594 for current living expenses in 1961. In addition they used \$220 for gifts and contributions and \$200 for personal insurance and had average savings of \$519 through a net increase of assets over liabilities. Their average after-tax income was \$4,424.

Current living expenses of farm families in 1961 were a third less than those of urban families, their incomes about a fourth less, and their savings more than twice as large.

Living expenditures of farm families in 1961 were about a fourth higher than in 1955. Adjustment for price change over the interval indicates that there was a real increase of about an eighth in consumption of goods and services.

2. Rural area development studies. Two studies provide an opportunity to compare the levels of living of open country families in five counties that have been marked by low income over a long period of time (East Texas) with levels in five nearby counties forming part of what has been described as a "potential low-income area" (Northern Blackland Area of Texas). Families in the two areas were similar as to size and the average age of the family head was the same. In both areas, families that had farmed during the survey period had, on the average, less income than those wholly dependent on non-farm sources. More Blackland than East Texas families were wholly dependent on farming and average money income was lower among Blackland families than in East Texas. Nonwhite families were a smaller proportion of the total number in the Blackland than in East Texas.

Despite lower incomes, open-country families in the Blackland spent slightly more for family living and lived better than did East Texas families. The higher standard of living in the Blackland shows up particularly in higher values of consumption for clothing, household operation, and medical care. Food consumption was about the same in the two areas but the Blackland families bought less food and raised more than did the East Texas families.

The findings of these and other studies of the Nutrition and Consumer Use Research Divisions have been channeled to home economists through several talks and articles and to Rural Areas Development administrators through special reports, service on USDA and interdepartmental committees and the like. One staff member served as vice-chairman of a USDA Ad Hoc Working Group charged with preparing a report on the Needs for Rural Living. Many sections of the report, especially those on food, housing, clothing, and medical care draw on NCU research.

B. Family financial management

Material for two popular bulletins on budgeting has been developed from the "teacher-leader" publication, "Helping Families Manage Their Finances." The first of these, written for young couples, is in press. The second,

for families with children, is being edited by ARS Information Specialists. These publications develop the philosophy of making the budget fit the family's circumstances, including their individual needs and preferences; outline the steps in constructing a budget; and give suggestions for making the budget work, once developed.

C. Clothing economics

A clothing budget is being developed using expenditure data obtained in a small survey of rural families in a low-income area in East Texas. This work will test methodology proposed for use with the more voluminous data from the 1961 Consumer Expenditure Survey.

D. Development of rural family living and Outlook reports

During the past year this Division has issued Family Economics Review quarterly. The distribution policy for this publication was liberalized, making it possible for high school teachers to be placed on the mailing list upon request. Appearance and readability of the publication have been improved.

The September, 1963 issue of Family Economics Review was devoted chiefly to a summary of the characteristics of U. S. families as revealed by the 1960 Census. This information is frequently needed by teachers yet difficult to locate and distill from the voluminous Census reports.

The Division had responsibility for planning four Family Living sessions and one general session of the Agricultural Outlook Conference held in November 1963, and is developing plans for four Family Living sessions for the 1964 conference. Division staff prepared five papers for the 1963 Family Living sessions and the statement on the outlook for family living included in the paper on the Agricultural Outlook presented at the general session.

Eight charts prepared by the Division were included in the Handbook of Agricultural Charts issued in September 1963. Eight charts are planned for inclusion in the Handbook of Agricultural Charts to be issued in September 1964.

PUBLICATIONS--USDA AND COOPERATIVE PROGRAMS

Rural Area Development Studies

Wolgamot, Irene H. 1964. Low-Income Groups--Opportunities Unlimited.
Jour. of Home Economics. 56(1): 27-29.

Family Financial Management

Mork, L. F. 1964. A consideration of cash vs. credit buying. Family Economics Review, ARS 62-5. June. p. 11.

Pennock, J. L. and Jaeger, C. 1964. Household service life of durable goods. Jour. of Home Economics. 56(1): 22-26.

Development of Rural Family Living and Outlook Reports

Consumer and Food Economics Research Division. 1963. The family. Section 6 in Handbook of Agricultural Charts, Ag. Handbook No. 258. pp. 187-193.

Consumer and Food Economics Division. 1963-64. Four issues of Family Economics Review, ARS 62-5. Sept. 1963, 19 pp.; Dec. 1963, 28 pp.; April 1964, 20 pp.; June 1964, 16 pp. Signed articles by staff in Family Economics Branch were:

Britton, V. 1963. Characteristics of U.S. families. Sept., pp. 3-16.

Britton, V. 1963. The outlook for clothing. Dec., pp. 7-12.

Ellis, M. J. 1963. The outlook for housing, household furnishings and equipment. Dec., pp. 16-21.

Holmes, E. G. 1964. Incomes of U.S. women. June, pp. 7-8.

Holmes, E. G. 1964. Present day housing of U.S. families. Apr., pp. 11-13.

Mork, L. F. 1963. Transportation. Dec., pp. 12-15.

Pennock, J. L. 1963. Medical care. Dec., pp. 21-26.

Wolgamot, Irene H. 1963. Job training--a resource for the unemployed. Mar., pp. 6-7.

Line Project Check List -- Reporting Year July 1, 1963 to June 30, 1964

Work and Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Project Incl. in	
			Summary of Progress (Yes-No)	Area and Subheading
JFE 1	Food consumption and dietary levels.			
CFE 1-4 <u>1/</u>	Variability in household food consumption.	Hyattsville, Md.	No	--
CFE 1-6	Analysis and interpretation of data on household food consumption and dietary levels.	Hyattsville, Md.	Yes	1A1, 2
CFE 1-7	Food consumption of individuals related to economic and social factors.	St. Paul, Minn. Hyattsville, Md.	Yes	1C2
CFE 1-8(C)	Household practices in homefreezer management.	Fort Wayne, Ind. and environs	Yes	E
CFE 1-9	Use and discard of food in households.	Washington, D.C.	No	--
CFE 1-10	Effects of food distribution programs on diets of needy families.	Pensacola, Fla. St. Louis, Mo. Hyattsville, Md.	Yes	1B2
CFE 2	Appraisal of foods and diets for human nutrition.			
CFE 2-1 (Rev.)	Development of basic information for food and nutrition programs.	Hyattsville, Md.	Yes	1G
CFE 2-5	Nutritive content of the U.S. per capita food supply, 1909 to present.	Hyattsville, Md.	Yes	1D
CFE 2-6 (Rev.)	Food Budgets.	Hyattsville, Md.	Yes	1F
CFE 2-8 <u>2/</u>	Tables of trace elements and sulfur in foods.	Hyattsville, Md.	No	--
CFE 2-9 <u>2/</u>	Tables of selected B-vitamins in food--folic acid, pantothenic acid vitamin B ₆ and B ₁₂ .	Hyattsville, Md.	No.	--
CFE 2-10 <u>2/</u>	Compilation of data on the composition and nutritive value of foods.	Hyattsville, Md.	Yes	2
CFE 0-0-1 <u>2/</u>	Composition of foods used by the Armed Forces.	Hyattsville, Md.	Yes	2

1/ Discontinued in July 1963.

2/ Initiated during year.

Line Project Check List -- Reporting Year July 1, 1963 to June 30, 1964

Work and Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Project Incl. in	
			Summary of Progress (Yes-No)	Area and Subheading
CFE 3	Rural family expenditures and household management.			
CFE 3-1 (Rev.)	Development of family living and outlook reports.	Hyattsville, Md.	Yes	3D
CFE 3-4 <u>1/</u>	Farm family expenditures as obtained from a continuous reporting system in Michigan.	East Lansing, Mich and Hyattsville, Md.	No	--
CFE 3-5	Rural family living in selected underdeveloped areas of Texas	Hyattsville, Md.	Yes	3A2
CFE 3-6 <u>1/</u>	Survey methods for obtaining data on farm family income, savings, assets, and debts.	Urbana, Ill. and Hyattsville, Md.	No	--
CFE 3-7	Rural family spending patterns in 1961.	Hyattsville, Md.	Yes	3A1
CFE 3-9	Development of clothing budgets.	Hyattsville, Md.	Yes	3C
CFE 3-10	Use of time by homemakers	Hyattsville, Md.	No	--
PL 480 E 25-ERS-ICK	Food consumption in relation to family income in the rural population of Spain.	Madrid and rural areas of Spain	Yes	1B3

1/ Discontinued in July 1963.